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ABSTRACT

This report examines Federal support for knowledge production and utilization (KPU), using data from the Interagency Research Information System developed by George Washington University's Social Research Group for the Interagency Panels on Early Childhood and Adolescence Research and Development. The report locates the data available for this study within the larger domain of education KPU and analyzes the allocation of funds in terms of various project characteristics, including KPU function, project content, performing organization, funding agency and KPU function, funding agency and project content, and funding agency and performing organization. (Author/JG)

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R&D SYSTEM STUDIES

TECHNICAL REPORT #3

1975 FEDERAL FUNDING FOR EDUCATION

KNOWLEDGE PRODUCTION AND UTILIZATION:

PROJECT CONTENT AND PERFORMER,

BY AGENCY

EA 010 115

The National Institute of Education
U.S. Department of Health, Education and Welfare
Washington, D.C. 20208

HIGHLIGHTS

- The primary focus of the vast majority of the activity is on educational services. Within this category large amounts of funds are obligated for educational services with the grade not specified, elementary education, and special education.

- More funds are spent on projects for children with special characteristics than children without special characteristics. More funds are expended on projects in which bilingual children are the target population than for any other special target population.

- Local education agencies receive 42 percent of Federal education KPU funds, while academic and nonprofit institutions receive 19 percent and 17 percent of the funds, respectively.

- Federal agencies support different kinds of KPU activities in terms of KPU function, primary focus of the project, and performing organization.

- NIE primarily supports development, evaluation, and applied research projects directed at children in general performed by nonprofit and academic institutions.

- OE primarily supports demonstration projects for children with special characteristics performed by local education agencies.

Technical Reports are designed to provide basic descriptive data on major aspects of the R&D system for education such as funding, organizations, and personnel. Findings are presented with a minimum of interpretation, but with enough conceptual and methodological detail for the reader to make judgments concerning the validity of the data. Interpretative reports and policy analyses will be issued separately, relying on the technical reports to provide methodological detail.

1975 Federal Funding for Education Knowledge Production and Utilization: Project Content and Performer, by Agency

November 1977

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INTRODUCTION

This report, the third in a series on Federal funding,[1] examines Federal support for education Knowledge Production and Utilization (KPU) using data from the Interagency Research Information System (IRIS) developed by George Washington University's Social Research Group (SRG) for the Interagency Panels on Early Childhood and Adolescence Research and Development. The report locates the data available for this study within the larger domain of education KPU and then analyzes the allocation of funds in terms of a number of project characteristics:

- o by KPU function
- o by project content
- o by performing organization
- o by agency and KPU function
- o by agency and project content
- o by agency and performing organization

Traditionally the analysis of Federal funding for education research and development has been based on statistics compiled by either the National Science Foundation's Division of Science Resources or the Office of Management and Budget. However, the NSF Science Resources series uses a narrow definition of R&D which excludes dissemination and other functions of great interest to NIE, and the OMB analysis does not provide separate data for the several R&D functions. In both cases the validity and reliability of the data are weakened because agencies supplying the data choose to interpret the definitions and procedures in varying ways.[2]

The Study Project on Social Research and Development conducted by the National Academy of Sciences was designed to overcome at least some of these difficulties.[3] However, data were collected on only four variables: agency/program, social policy area, R&D function, and fiscal year (1975-1977). In addition, because data were collected at the program level, many programs that are large and heterogeneous had to be coded into one category. The analysis, therefore, cannot be refined to the same level that could be with project-level data.

The IRIS data base maintained by George Washington University's Social Research Group for the Interagency Panels on Early Childhood and Adolescence Research and Development is a project-level data base covering education KPU activities supported by the Federal government. Since projects are smaller units than programs, coding can be more precise. IRIS uses a detailed set of categories, and projects are coded by trained coders. Given the richness of the classification system, many analyses are possible, depending on the analyst's purposes. We wish to provide a broad overview of agency funding and have chosen to highlight the following project content characteristics:

- o Type of KPU function supported
- o Primary focus of the project
- o Demographic characteristics of the population studied
- o Special characteristics of the population studied
- o Type of intervention studied

The IRIS data base is designed to cover projects focused on human development at two age levels--early childhood and adolescence. Although the overlap with education is considerable, IRIS is both larger and smaller than our domain of interest. It is larger in that it contains some projects falling outside of education KPU (e.g., health or welfare services, studies of the family); it is smaller in that its coverage is incomplete with respect to agencies, age groups, topical areas, and functions:[4]

- o Only data from member agencies of the Interagency Panels on Early Childhood and Adolescence Research and Development are included. While membership is quite extensive, covering 27 agencies, education KPU activities of the National Science Foundation, the National Center for Educational Statistics, and the Department of Defense are omitted.
- o Projects dealing with adult and post-secondary education typically are excluded.[5]
- o Projects that do not focus on individual learning or development are usually excluded (e.g., projects dealing with teaching, school organization, or educational finance).
- o General purpose statistics are excluded.
- o Some dissemination activities are excluded.

A more specific description of how the present data base relates to the total education KPU domain will be made after treating several conceptual issues in the next section.

CONCEPTUAL ISSUES

In order to understand and appropriately interpret the data presented in this report, five questions must be addressed:

- What types of functions are subsumed under the term "knowledge production and utilization"?
- What is meant by the term "education relevant" in relation to project focus?
- What criteria were used to select projects as education KPU relevant?
- What portion of the IRIS data are education KPU relevant?
- What portion of all Federal education KPU activity is covered in the IRIS data base?

KPU Functions

Recently there has been a growing realization that the term "R&D" is inadequate to denote either the scope or variety of functions of interest. In terms of scope it has become increasingly clear that all or part of the activities that have gone under the headings of demonstration, dissemination, and evaluation are of equal importance in a comprehensive program of planned educational change. To encompass this broader domain SRC refers to "Research and Related Activities." Other more or less equivalent terms in current use include "Knowledge Production and Application" (KPA) (NAS, forthcoming); "Knowledge Production and Utilization" (KPU) (NIE, 1976); "Research, Development, Dissemination, and Evaluation" (RDD&E) (Schalock and Sell, 1972); and "Research Development and Innovation"(RD/I) (Radnor et al., 1976; 1977). Throughout this paper we use Knowledge Production and Utilization (KPU) to denote this domain and classify activities in it by KPU function.

KPU functions are concerned with different aspects of the attempt to generate, transfer, and use general knowledge and knowledge products for the improvement of education. Churchill (1974) has suggested four criteria to define research-based Knowledge Production:

- Generalizability of activity results
- Conscious use of a particular methodology of work

- o Durability of results
- o Novelty of an activity or its results

The boundary at the Knowledge Utilization end is particularly difficult to define, because utilization activities will involve other types of knowledge in addition to what we have defined as Knowledge Production. An attempt by an individual teacher to introduce some element of novelty in his or her class is beyond our purview unless there is some transaction with some generalizable body of knowledge, information, or products. This could take either of two directions. The teacher may either attempt to draw upon some resource base which includes KP information, or attempt some systematic evaluation and transfer of some novel idea of his/her own.

Given this broad scope, it becomes important to differentiate carefully the variety of functions encompassed. SRG classifies KPU functions into five major categories and subdivides one of these categories into four subcategories. The categories are basic research, applied research, evaluation research, research support, and utilization activity and policy research. The applied research category is subdivided into the following subcategories: pilot study, development, demonstration and/or replication, and other applied research.[6/] (See appendix A for a list and definitions of the categories and subcategories.)

Project Focus

The overall IRIS data base is concerned with the study of children and adolescents. Because research dealing with children may involve many substantive areas, SRG has developed a classification scheme to describe both the primary and secondary focuses of each project. SRG developed eight mutually exclusive categories of which educational services is one. (See appendix B for a full listing of these areas.) No formal definition of educational services is provided; rather it is defined by the listing of subareas to be included as follows:

- o Special education
- o Early childhood education (infant-preschool)
- o Elementary school education (K-6 grade)
- o Secondary school education (junior and senior high school)

- o Postsecondary education (college, adult education)
- o Alternative education (outside of school)

Clearly educational services contains the core projects we wish to identify, but are there projects with a primary focus in other areas that have a secondary focus in education or are otherwise relevant to education? SRG codes both the primary and secondary focuses of a project; therefore it is possible to include projects whose secondary focus is educational services. In addition, certain aspects of child or adolescent development (e.g., cognitive or socioemotional development) could be viewed as relevant to education.

Criteria Used to Select Projects as Education KPU Relevant

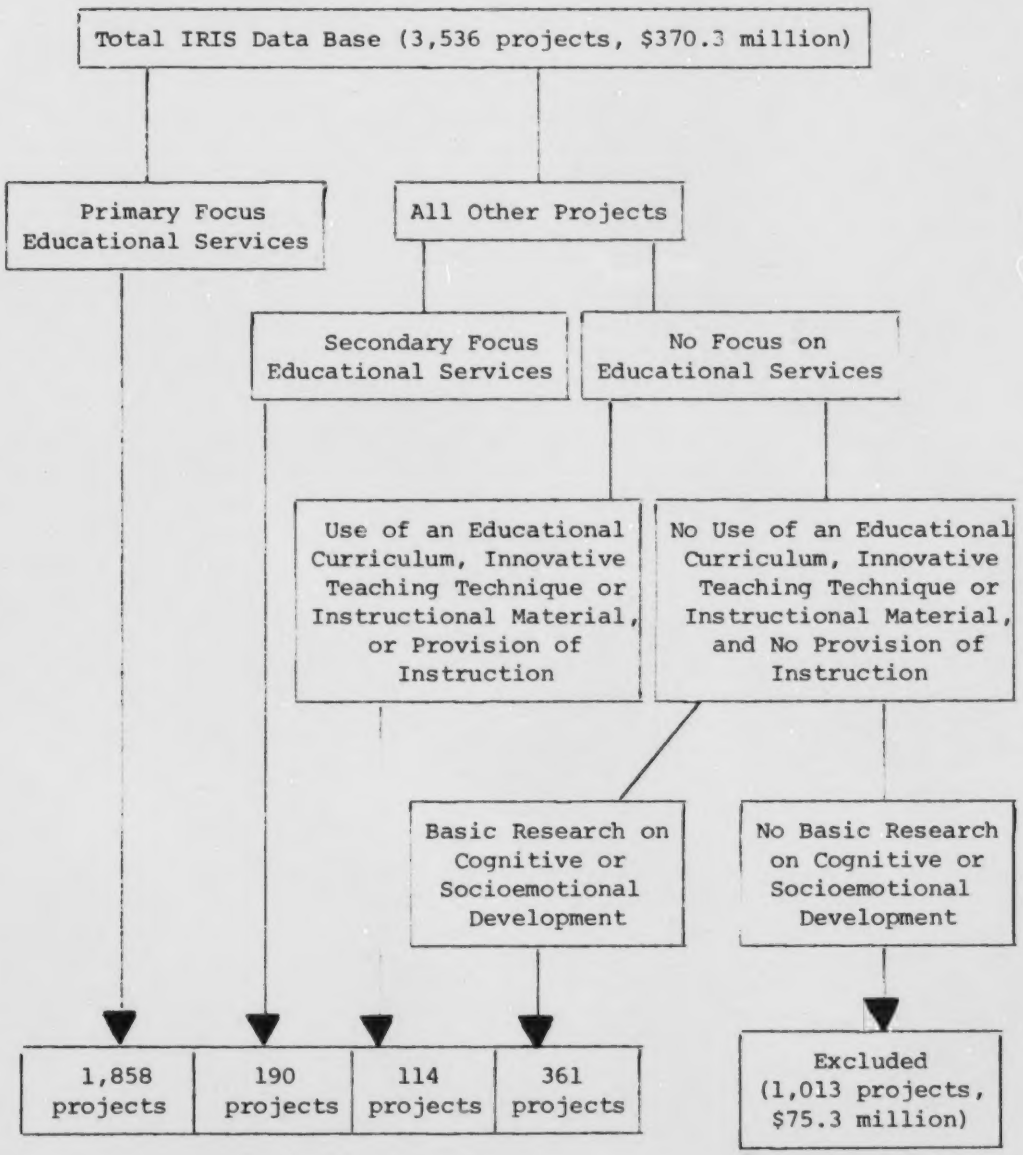
Shown in figure 1 is a schematic diagram summarizing the procedures used to select the education KPU projects from the IRIS data base. As a first step, all projects which had educational services as a primary focus were deemed education KPU relevant. Second, all projects with educational services as a secondary focus were included in our data base.

In examining projects which do not focus on educational services, it is necessary to determine whether or not the project is related to education. These criteria must refer both to the nature of education and the type of KPU function. For all KPU functions except basic research, the key question is: What is education? Without attempting a full discussion of this complex topic, we have chosen to include projects meeting any one of the following criteria:

- o Provision of instruction to children or adolescents or research about such instruction.
- o Use of an educational curriculum for children or adolescents or research about such a curriculum.
- o Use of or investigation into innovative teaching procedures or approaches to instruction.
- o Use or development of innovative instructional material for children or adolescents.

From some points of view, the idea of basic research relevant to education is a contradiction in terms, since basic research is defined as having no reference to fields of application. Although the connections are not always clear, it is generally believed that applied fields interact in important ways with fields of fundamental knowledge.

Figure 1. Schematic diagram of selection procedure used to identify projects in education KPU.


Total IRIS Data Base (3,536 projects, $370.3 million)
Primary Focus Educational Services
All Other Projects
Secondary Focus Educational Services
No Focus on Educational Services
Use of an Educational Curriculum, Innovative Teaching Technique or Instructional Material, or Provision of Instruction
No Use of an Educational Curriculum, Innovative Teaching Technique or Instructional Material, and No Provision of Instruction
Basic Research on Cognitive or Socioemotional Development
No Basic Research on Cognitive or Socioemotional Development
1,858 projects
190 projects
114 projects
361 projects
Excluded (1,013 projects, $75.3 million)
Our Data Base (2,523 projects, $295.0 million)

There are many fields of knowledge of potential importance to education, but it seems impractical to include them all. We have followed the lead of the Social Research Group and used as the criterion all basic research on cognitive or socioemotional development (Harrell, Wirtz, and Hurt, 1977). Although this criterion may omit some relevant areas, a strong prima facie case can be made for its use as a starting point.

Education KPU Relevant Portion of IRIS Data Base

Applying the above criteria to the IRIS data base, 2,523 of the 3,536 projects are defined as involving education KPU activities.[7/] The $295.0 million obligated for education KPU projects represents 80 percent of the total funds for all projects in the IRIS data base. The vast majority (1,858 projects, 74 percent) of the education projects have as their primary focus the provision of educational services. Another 190 projects (7 percent) have the provision of educational services as a secondary focus. A total of 114 projects do not have an educational services focus but are involved in research on or the use or provision of instruction, educational curriculums, innovative teaching procedures, or instructional materials for children or adolescents. Finally, 361 projects (14 percent) are concerned with basic research on the cognitive or socioemotional development of children or adolescents.

Portion of All Federal Education KPU Activity Covered in IRIS Data Base

In a recent report, Nelson, Sowers, and Mason (1977) developed an estimate of total Federal funding for education KPU based on four different data bases. As can be seen in table 1, the IRIS data base accounts for only 58 percent of the total estimated by Nelson, et al. (1977). The extent to which IRIS covers the education KPU activities of the major agencies differs widely. For example, 95 percent of the education KPU activities of the Office of Human Development are included, compared to 79 percent of the Office of Education's activities, 62 percent of NIE's activities, and none of the National Science Foundation's activities.

As mentioned previously, this lack of coverage is due to a number of factors. A major limitation of the IRIS data base is that only those agencies which are members of the Interagency Panels are covered. As can be seen in table 1, there are a number of agencies and departments conducting education KPU activities which are not members of the Panels. These nonmember departments and agencies obligated $132.5 million for education KPU activity in fiscal year 1975, representing 26 percent of NIE's estimate.

Table 1. Federal obligations for education knowledge production and utilization, by department and agency, fiscal year 1975, as indicated in the IRIS data base and NIE's estimate.

Department and Agency	Dollars (thousands)		IRIS as percentage of NIE's estimate
	IRIS	NIE's Estimate	
Total	295,041	512,717	58
DEPARTMENTS			
I. Department of HEW	293,499	422,527	69
Education			
Office of Education	207,889	264,458	79
Bureau of School Systems*	56,131	70,312	80
Supplementary Ctrs.	5,808	10,000	58
Equal Opportunity	640	640	100
Follow Through	42,910	52,464	82
Environmental Ed.	6,773	6,773	100
Drug Education	0	435	0
Bur. Occ./Adult Ed.*	7,416	43,086	17
Bur. Ed. for Handicapped*	44,750	33,722	133[1/]
Off. of the Commissioner*	79,034	84,235	94
Off. of Bilingual Ed.	68,555	68,555	100
Right-to-Read	2,312	5,257	44
Off. of Career Ed.	8,167	10,423	78
Off. Plan/Budget/Eval.*	9,012	17,103	53
Bureau Post-Secondary Ed.	0	3,800	0
Off. of Indian Education*	11,546	12,200	95
National Institute of Ed.*	45,457	73,820	62
Ass't. Sec. for Education	0	20,555	0

(Continued)

Table 1. Federal obligations for education knowledge production and utilization, by department and agency, fiscal year 1975, as indicated in the IRIS data base and NIE's estimate. (cont'd)

	Department and Agency	Dollars (thousands)		IRIS as percentage of NIE's estimate
		IRIS	NIE's Estimate	
	Public Health Service	25,328	46,824	54
	ADAMHA	16,807	16,807	100
	NIMH (Mental Health)*	10,864	10,864	100
	NIAA-A (Alcoholism)*	3,135	3,135	100
	NIDA (Drug Abuse)*			
	Health Resources Adm.	0	14,775	0
	National Inst. of Health	7,870	12,635	62
	NICHD (Child Health)*	7,030	7,030	100
	NHLI (Heart and Lung)	0	4,265	0
	NINCDS (Neurological)*	840	840	100
	Nat'l Lib. of Medicine	0	500	0
	Center for Disease Control	0	1,956	0
	Health Services Adm.	651	651	100
	Bur. Community Health Ser.*	651	651	100
	Office of Human Development	14,644	15,364	95
	Off. of Child Development*	14,167	14,167	100
	Administration on Aging	0	720	0
	Off. Youth Development*	440	440	100
	Rehabilitative Services Adm.*	37	37	100
	Ass't Secretary Planning and Evaluation	0	1,325	0
	Social Rehabilitation Ser.*	181	181	100
II.	Department of Agriculture	578	778	74
	Coop. State Research Ser.*	578	578	100
	Food & Nutrition Service	0	220	0
III.	Department of Defense	0	21,451	0

(Continued)

Table 1. Federal obligations for education knowledge production and utilization, by department and agency, fiscal year 1975, as indicated in the IRIS data base and NIE's estimate. (cont'd)

Department and Agency	Dollars (thousands)		IRIS as percentage of NIE's estimate
	IRIS	NIE's Estimate	
IV. Department of the Interior	0	1,178	0
V. Department of Labor*	951	951	100
VI. Department of State	0	1,447	0
INDEPENDENT AGENCIES			
I. ACTION*	12	12	100
II. Appalachian Regional Comm.	0	1,300	0
III. Community Services Adm.	0	2,500	0
IV. Nat'l Endowment for the Arts	0	450	0
V. Nat'l Endowment for the Humanities	0	17,061	0
VI. National Science Foundation	0	39,875	0
VII. Smithsonian Institution	0	3,187	0

SOURCE: Nelson, Sowers, and Mason (1977).

* Member agencies of the Interagency Panels on Early Childhood and Adolescence Research and Development.

1/ SRG included Deaf/Blind Centers, which, in our judgment, are outside the education KPU boundaries. However, funds for these Centers are included in the analyses presented in this report because the data were analyzed prior to the determination that these Centers were outside the education KPU boundaries.

Another limitation of the IRIS data base is that projects which deal with persons over 24 years of age are excluded. Thus, for example, the obligations recorded for the Bureau of Occupational and Adult Education and the Office of Career Education are severely reduced by this factor, and projects sponsored by the Bureau of Post-Secondary Education are excluded entirely. Using NIE's estimate, the IRIS data base does not cover $41.7 million in activity of these agencies, or 8 percent of NIE's total estimate.

Other exclusions from IRIS can be traced to differences in definitions:

- Funds for the National Diffusion Network are omitted from the Division of Supplementary Centers and Services by SRG.
- Within the Right-to-Read Program, funds for community-based programs are excluded from the IRIS data base.
- In the Office of Planning, Budget, and Evaluation, the IRIS data base includes only projects within the Division of Mandated Studies and Evaluation.
- The figures for the National Institute of Education are discrepant because the IRIS data base excludes salaries and expenses, certain dissemination projects (e.g., ERIC), and studies of educational finance and school organization.

Therefore, the findings presented in this report do not apply to education KPU in general but only to the subset of projects included in the IRIS data base.

KPU FUNCTION BY PRIMARY FOCUS

KPU Function

SRG coded projects into eight mutually exclusive KPU functions, which were listed previously. In an earlier report, we have developed a three-way classification of KPU functions (Mason, Nelson, and Sowers, 1977). Although the categories used by SRG and NAS are not identical, they can both be mapped into our three-way classification scheme in about the same way.[8/] The three are:

- Knowledge Production. Activities or information which are intended to increase our general knowledge and for which the

problems or needs are identified intrinsically rather than with reference to real-world problems.

  - Basic research

- o Problem Solving. Activities which apply systematic methods or disciplined inquiry to the solution of problems which are identified extrinsically in the real world and for which the outcomes are intended to be transferable or applicable to a class of real-world situations.

  - Applied research
  - Pilot study
  - Development
  - Demonstration and/or replication projects
  - Policy research
  - Evaluation research

- o Utilization. Activities designed to facilitate the transfer and use of knowledge, information, or outcomes of mission-oriented activities.

  - Research support and utilization activities

Shown in table 2 is the distribution of funds by KPU function. The vast majority of funds are obligated for problem-solving activities followed by knowledge production and utilization. (The low proportion for utilization is, of course, related to the fact that SRG definitions and procedures tend to exclude these projects.) Turning to specific subfunctions, most funds are obligated for pilot, demonstration, or replication projects. Of the other KPU subfunctions, only development accounts for at least one-tenth of all education KPU obligations.

Primary Focus

There are eight mutually exclusive categories for primary focus, and three of these categories include subcategories. (See table 3.) The vast majority of the funds are obligated for educational services. Three types of educational services account for at least one-tenth of all education KPU funding: other educational services (educational services with the grade not specified), elementary education, and

Table 2. Federal obligations for early childhood and adolescent education KPU, by type of KPU function, fiscal year 1975.

Function	Dollars (thousands)	Percent
Total	295,041	100
Knowledge Production	17,216	6
Basic Research	17,216	6
Problem Solving	270,577	92
Applied Research	12,657	4
Pilot, Demonstr. & Replic.	182,297	62
Development	50,656	17
Policy Research	1,972	1
Evaluation Research	22,995	8
Utilization	7,248	2
Res. Sup. & Utiliz.	7,248	2

Table 3. Federal obligations for early childhood and adolescent education KPU, by primary focus, fiscal year 1975.

Primary Focus	Dollars (thousands)	Percent
Total	295,041	100
Child or Adolescent Development	14,187	5
Physical Development	1,949	1
Cognitive Development	6,481	2
Socioemotional Development	4,640	2
Other Development	1,117	*
Family	1,587	1
Neighborhood or Community Environ.	33	*
Broad Social Environment	547	*
Study of Research Methods	2,285	1
Health or Welfare Services	18,237	6
Day Care	3,788	1
Health Care	5,544	2
Protective/Advocacy Services	5,293	2
Other Services	3,612	1
Educational Services	257,531	87
Special Education	43,743	15
Early Childhood Education	5,636	2
Elementary School Education	80,555	27
Secondary Education	18,671	6
Postsecondary Education	5,548	2
Alternative Education	1,501	1
Other Educational Services	101,877	34
Juvenile Justice	633	*

* Less than 0.5 percent.

special education. It is clear, within the limits of these data, that the emphasis of the Federal Government's effort in education KPU is on elementary and special education.

Primary Focus by KPU Function

Although the understanding of education KPU activity is assisted by the examination of the distribution of funds for each of the variables individually, much greater understanding can be obtained by examining the variables in combination. Tables 4 and 5 present the funding data by primary focus and KPU function. Based on the detailed data in appendix 1, table 4 presents the data in terms of the percentage of funds for each primary focus category by KPU function, while table 5 presents the percentage of each KPU function by primary focus.

Projects which have as their primary focus the study of the development of children or adolescents are typically basic research projects. On the other hand, projects with a service focus are involved in problem solving. Educational service projects typically involve pilot or demonstration activity. It is of interest to note that almost all projects which have as their primary focus elementary education are demonstration projects. In addition, applied research accounts for less than one-fifth of the funds obligated for each of the educational service categories with the exception of alternative education.9/

As indicated in table 5, two-thirds of all basic research funds are obligated for the study of childhood or adolescent development. Applied research projects tend to be focused on education in general, health or welfare services, and secondary education. Over two-fifths of demonstration funds are focused on elementary education. For all other problem-solving activities, at least one-half the funds are obligated for educational service projects in which the target population is unspecified. It is also of interest to note that 22 percent of all development funds are for special education projects.

PROJECT CONTENT

In the SRG classification, many of the key aspects of project content are contained within the hierarchical levels of the code for "area of research." (See figure 2 for a diagram of this coding scheme.) Multiple coding is used where applicable. On the first level are seven major areas of research which are defined as follows:

- The developmental processes and status of children and adolescents
- The study of research methods

Table 4. Federal obligations for early childhood and adolescent education KPU: Primary focus by KPU function, fiscal year 1975.

Primary Focus	Dollars (thousands)	Percent								
		Total	Knowledge Production	Problem Solving						Utilization
			Basic Research	Total	Applied Research	Pilot Demon. & Repli.	Develop.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Total	295,041	100	6	92	4	62	17	1	8	2
Child or Adolescent Development	14,187	100	82	17	2	14	1	0	0	1
Physical Development	1,989	100	63	37	0	37	0	0	0	0
Cognitive Development	6,481	100	90	10	1	8	1	0	0	1
Socioemotional Development	4,640	100	85	16	6	7	3	0	0	1
Other Development	1,117	100	61	39	0	39	0	0	0	0
Family	1,587	100	75	25	0	21	0	0	4	0
Neighborhood or Community Environment	33	100	100	0	0	0	0	0	0	0
Broad Social Environment	547	100	100	0	0	0	0	0	0	0
Study of Research Methods	2,285	100	2	75	0	10	37	*	28	23
Health or Welfare Services	18,237	100	5	94	16	44	12	1	20	1
Day Care	3,788	100	8	92	*	23	0	0	69	0
Health Care	5,544	100	9	91	33	30	17	0	11	0
Protective/Advocacy Services	5,293	100	2	98	15	60	19	4	0	0
Other Services	3,612	100	2	94	8	64	7	0	15	5
Educational Services	257,531	100	1	96	4	67	18	1	7	3
Special Education	43,743	100	1	95	2	65	26	*	2	4
Early Childhood Education	5,636	100	3	97	11	66	13	*	7	*
Elementary Education	80,555	100	*	99	1	92	3	0	3	*
Secondary Education	18,670	100	2	98	15	51	31	*	1	*
Postsecondary Education	5,548	100	3	94	7	49	27	4	7	2
Alternative Education	1,501	100	1	99	21	70	6	0	2	0
Other Educational Services	101,877	100	1	95	4	51	25	1	14	4
Juvenile Justice	633	100	0	100	0	46	0	0	54	0

Percentages based on data appearing in appendix 1.

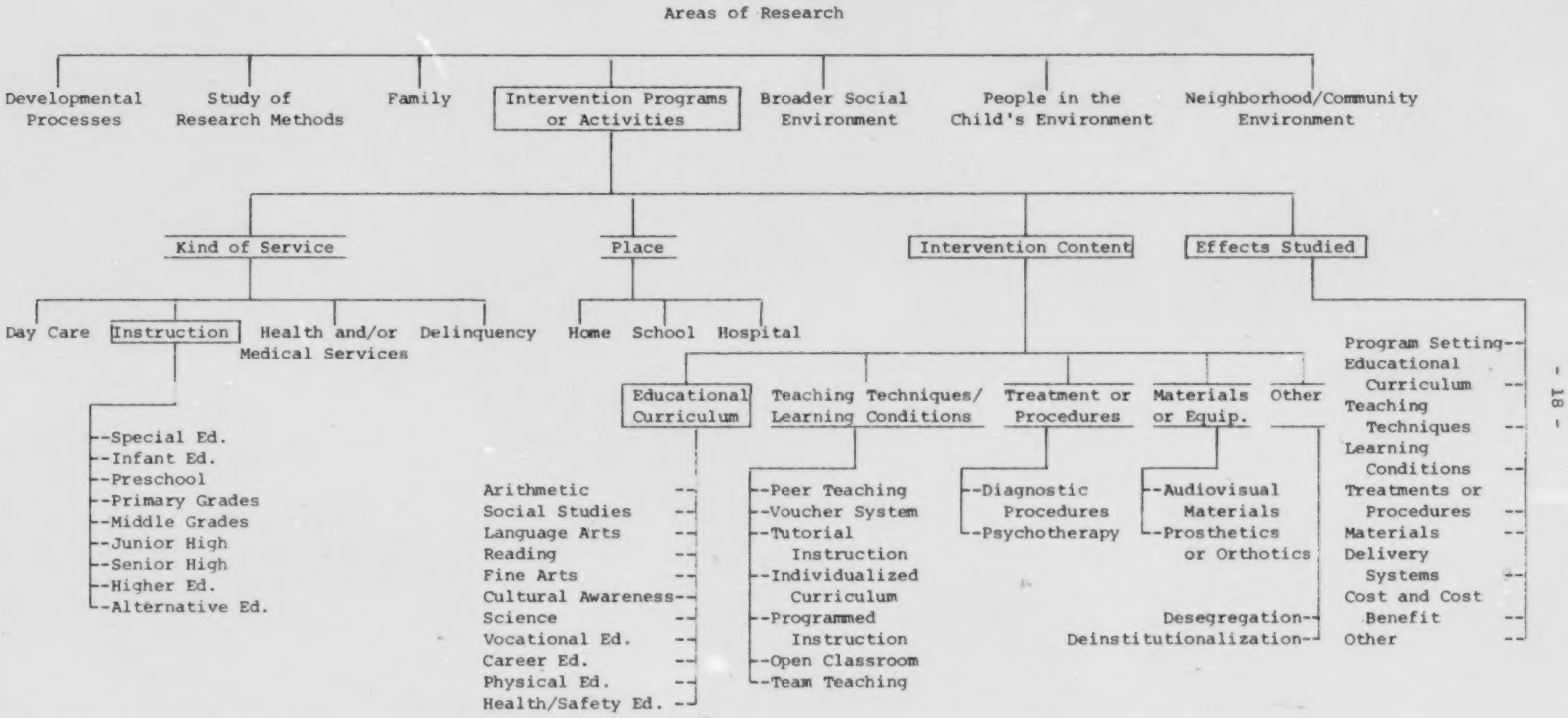
* Less than 0.5 percent.

Table 5. Federal obligations for early childhood and adolescent education KPU: Knowledge production and utilization function by primary focus, fiscal year 1975. (Percent)

Primary Focus	Total	Knowledge Production	Problem Solving						Utilization
		Basic Research	Total	Applied Research	Pilot Demon. & Repli.	Develop.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Dollars (thousands)	295,041	17,216	270,577	12,657	182,297	50,656	1,972	22,995	7,248
Percent									
Total	100	100	100	100	100	100	100	100	100
Child or Adolescent Development	5	68	1	2	1	*	0	0	1
Physical Development	1	7	*	0	*	0	0	0	0
Cognitive Development	2	34	*	*	*	*	0	0	1
Socioemotional Development	2	23	*	2	*	*	0	0	*
Other Development	*	4	*	0	*	0	0	0	0
Family	1	7	*	0	*	0	0	*	0
Neighborhood or Community Environment	*	*	0	0	0	0	0	0	0
Broad Social Environment	*	3	0	0	0	0	0	0	0
Study of Research Methods	1	*	1	0	*	2	*	3	7
Health or Welfare Services	6	6	6	23	4	4	11	16	2
Day Care	1	2	1	*	*	0	0	11	0
Health Care	2	3	2	14	1	2	0	2	0
Protective/Advocacy Services	2	1	2	6	2	2	11	0	0
Other Services	1	*	1	2	1	*	0	2	2
Educational Services	87	16	92	74	94	94	89	79	89
Special Education	15	3	15	6	16	22	11	4	25
Early Childhood Education	2	1	2	5	2	1	*	2	*
Elementary Education	27	1	30	5	41	5	0	11	3
Secondary Education	6	2	7	22	5	11	1	1	*
Postsecondary Education	2	1	2	3	2	3	12	2	1
Alternative Education	*	*	1	2	1	*	0	*	0
Other Educational Services	34	8	36	31	28	50	65	60	60
Juvenile Justice	1	0	*	0	*	0	0	1	0

Percentages based on data appearing in appendix 1.
* Less than 0.5 percent.

Figure 2. Schematic diagram of the hierarchical coding scheme used by IRIS to code the content of projects.



Note: Variables discussed in the text are boxed.

- o The family
- o Intervention programs and activities
- o The broad social environment
- o People in the child's environment
- o The neighborhood/community

Within each of these broad categories are a number of subcategories which describe various aspects of the project. For example, for each project involving intervention programs and activities the following aspects would be indicated:

- o Kind of service
- o Place
- o Intervention content
- o Effects studied

For each of these aspects, a number of categories and subcategories are provided. For example, under intervention content are listed the following five major categories with examples of the subcategories in parentheses:

- o Educational curriculum (arithmetic, social studies)
- o Teaching techniques/learning conditions (peer teaching, individualized instruction)
- o Treatment or procedures (diagnostic procedures, psychotherapy)
- o Materials or equipment (instructional materials, prosthetics and orthotics)
- o Other program policies and activities (desegregation, deinstitutionalization)

Because of the complexity and extensiveness of the IRIS coding scheme in describing the content of projects, we are only presenting examples of the types of analyses that can be conducted. In figure 2 the categories we have chosen to explore in more depth are shown in "boxes."

Almost all education KPU (94 percent) involves intervention programs and activities. Included in this category are those programs which have as their primary focus health or welfare services, educational services, or juvenile justice. Major subcategories under this category include kind of service, place, intervention content, and effects studied. At first glance, all of these subcategories, with the exception of place, would appear important in describing the content of Federal funding for education KPU. However, upon closer examination, we find that information contained in these subcategories overlaps extensively other aspects of the IRIS coding scheme. For example, within kind of service the entries under the subcategory instruction overlap the primary focus categories dealing with age group studied. (See figure 2.) In addition, the entries under intervention content and effects studied overlap.

Effects Studied

Effects studied refers to those aspects of an intervention program which are being investigated by a particular project. The various types of effects studied are shown in table 6. Because projects may be multiple-coded, the sum of the entries is greater than the number of projects. The emphasis is on the study of the effects of curriculum and teaching techniques. Somewhat less emphasis is placed on the study of materials, treatment techniques, and other innovative policies and activities.

Curriculum

NIE's special interest in the examination of Federal KPU activity involving curriculum was stimulated by a resolution of the National Council on Educational Research which called for a thorough discussion of the value of curriculum change as an aid to schools (NCER, 1975). In response to this resolution, an NIE Curriculum Task Force was formed which for the past year and a half has sponsored a variety of activities designed to provide the basis for NIE curriculum policies. (See Schafferzick and Sykes (1977) for a summary of these activities and a discussion of the policy issues.) These activities have resulted in a new NIE policy regarding curriculum development (NCER, 1977).

Using the IRIS data base, it is possible to examine all projects which contain a curriculum component (e.g., all intervention projects containing an educational curriculum component, figure 2). The $229.3 million obligated for these curriculum projects represents 78 percent of the total funds.

Table 6. Federal obligations for early childhood and adolescent education intervention programs or activities, by type of effect studied, fiscal year 1975.

Type of Effect Studied	Dollars (thousands)	Percent
Total	276,387	*
Educational Curriculum	204,485	74
Teaching Techniques/Learning Conditions	186,843	68
Materials	121,939	44
Program Policies	106,995	39
Treatments or Procedures	94,495	34
Delivery Systems	40,118	15
Cost and Cost-Benefit	14,435	5
Program Setting	12,387	5

* The total of $276.4 million is less than the total of $295.0 million because only projects involving intervention programs and activities are included. Because projects could be classified as studying more than one type of effect, the entries add to more than the total.

Shown in table 7 is the distribution of funds for projects dealing with the various subjects or curriculum topics. Again, with this variable projects may be multiple-coded. The emphasis is on basic skills in that more funds are obligated for mathematics and reading than for any other curriculum topic. Another topic in which there is a great deal of activity is cultural awareness. Most of these funds (84 percent) are contained in Office of Bilingual Education projects, 99 percent of which have a cultural awareness component. The amount of funds for science education is severely underestimated because the National Science Foundation is not a member of the Panels and hence its projects are not included in the data base.10/

Expanding on the question of Federal involvement in curriculum, it may be useful to examine the types of curriculums being investigated at various grade levels. Because SRG allows multiple coding for both of these variables, the data must be interpreted with great caution. However, as can be seen in table 8, important differences do emerge. Although basic skills (mathematics, reading, and language arts) are emphasized at each grade level, the proportion of funds for mathematics and language arts decreases as the grade level increases. The funds for reading programs are higher in the middle and junior high grades than in either the primary or senior high grades. As grade level increases funds for career education also increase. In fact, over one-third of the funds for senior high school grades is for career education.

Finally we may ask with regard to curriculum, what kinds of KPU activities are being conducted with respect to curriculum generally and to the various curriculum topics? Shown in table 9 is the funding for each curriculum topic by type of KPU activity. Almost three-fourths of the funds for curriculum projects is for pilot, demonstration, or replication projects; another 15 percent is for development. For the majority of the curriculum topics, most funds are expended for pilot, demonstration, or replication projects. Of what are typically termed academic curriculums (mathematics, social studies, language arts, reading, and science), only in the reading topic is at least one-tenth of the funds spent on development. Development projects account for a greater percentage of funds in environmental education than in any other area. Other areas in which large portions of funds are devoted to development are citizenship, vocational education, career education, parenthood, and drug abuse. Applied research is most frequently being conducted in drug abuse education, citizenship, and career education. Only with vocational education do evaluation projects account for even one-tenth of the funds.

Table 7. Federal obligations for early childhood and adolescent education curriculum projects, by curriculum topic, fiscal year 1975.

Curriculum Area	Dollars (thousands)	Percent
Total	229,265	*
Arithmetic/Mathematics	103,719	45
Reading	91,566	40
Cultural Awareness	79,184	34
Language Arts	54,205	24
Health/Safety Education	53,823	23
Social Studies	41,498	18
Science	32,084	14
Career Education	24,345	11
Fine Arts	21,406	9
Vocational/Technical	12,997	6
Physical Education	9,377	4
Drug Abuse Education	5,326	2
Environmental Education	4,480	2
Education for Parenthood	4,476	2
Sex Education	617	**
Citizenship Training	411	**

* The total of $229.3 million is less than the total of $295.0 million because only projects concerned with curriculum are included.
Because projects could be classified as dealing with more than one curriculum area, the entries add to more than the total.

** Less than 0.5 percent.

Table 8. Federal obligations for early childhood and adolescent education curriculum projects: Grade level by curriculum topic, fiscal year 1975.

Curriculum Topic	Grade Level (Dollars in thousands)				Grade Level (Percent)			
	Primary	Middle	Junior High	Senior High	Primary	Middle	Junior High	Senior High
Total	121,648	63,772	47,209	47,080	*	*	*	*
Mathematics/Arith.	86,522	35,397	24,002	17,968	71	56	51	38
Social Studies	29,885	24,186	17,534	10,991	25	38	37	23
Language Arts	106,321	51,266	32,527	25,117	87	80	69	53
Reading	58,807	47,922	30,462	23,270	48	75	65	49
Science	23,933	18,972	11,662	7,143	20	30	25	15
Environment	3,013	3,104	3,105	3,008	2	5	7	6
Cultural Awareness	58,420	47,006	30,147	23,765	48	74	64	50
Citizenship	0	0	42	94	0	0	**	**
Fine Arts	14,428	12,419	8,456	5,231	12	19	18	11
Vocational Ed.	2,693	2,315	4,606	5,061	2	4	10	11
Career Education	9,743	9,648	11,749	16,908	8	15	25	36
Physical Education	7,252	6,111	3,480	2,180	6	10	7	5
Health Education	47,149	3,362	2,500	2,074	39	5	5	4
Drug Abuse Ed.	642	821	977	977	1	1	2	2
Sex Education	136	136	136	136	**	**	**	**
Parenthood Ed.	86	86	386	183	**	**	1	**

* Because projects could be classified as dealing with more than one curriculum topic, the entries add to more than the total.

** Less than 0.5 percent.

Table 9. Federal obligations for early childhood and adolescent education curriculum projects: Curriculum topic by type of KPU function, fiscal year 1975.

Curriculum Topic	KPU function (Dollars in thousands)								KPU function (Percent)							
	Total	Basic Res.	Applied Res.	Pilot,Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Sup. & Util.	Total	Basic Res.	App. Res.	Pil.,Dem. & Repli.	Devel.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Total	229,265	2,305	9,347	165,864	35,382	792	11,268	4,303	100	1	4	72	15	*	5	2
Math./Arith.	103,719	46	554	95,288	4,473	0	3,271	87	100	*	1	92	4	0	3	*
Social Studies	41,498	0	90	38,849	1,686	0	874	0	100	0	*	94	4	0	2	0
Language Arts	54,205	286	666	49,604	3,492	0	97	59	100	1	1	92	6	0	*	*
Reading	91,566	139	1,432	76,214	9,818	0	3,580	382	100	*	2	83	11	0	4	*
Science	32,084	0	161	30,889	182	0	852	0	100	0	*	96	1	0	3	0
Environment	4,480	0	145	1,343	2,992	0	0	0	100	0	3	30	67	0	0	0
Cultural Aware.	79,184	0	657	73,474	2,651	45	2,257	100	100	0	1	93	3	*	3	*
Citizenship	411	0	80	135	196	0	0	0	100	0	19	33	48	0	0	0
Fine Arts	21,406	0	278	17,960	2,315	0	852	0	100	0	1	84	11	0	4	0
Vocational Ed.	12,997	424	367	5,866	4,017	242	1,888	193	100	3	3	45	31	2	14	1
Career Ed.	24,345	462	3,484	12,926	5,901	243	741	588	100	2	14	53	24	1	3	2
Physical Ed.	9,377	0	117	8,945	315	0	0	0	100	0	1	95	3	0	0	0
Health Ed.	53,823	240	406	51,436	1,396	0	345	0	100	*	1	96	3	0	1	0
Drug Abuse Ed.	5,326	424	1,811	2,174	805	0	111	0	100	8	34	41	15	0	2	0
Sex Ed.	617	0	0	554	0	0	0	62	100	0	0	90	0	0	0	10
Parenthood Ed.	4,476	0	481	2,444	1,274	0	276	0	100	0	11	55	28	0	6	0

* Less than 0.5 percent.

TARGET POPULATION

An important question in understanding Federal education KPU funding concerns the populations for which programs are designed. SRG classifies the target populations of projects on two sets of variables: special characteristics of the children and demographic variables of the children.

All Projects

Special Characteristics.--Shown in table 10 is the funding for target populations identified by special characteristics. More Federal support goes to children with special characteristics than to children without such characteristics. The special population receiving the most Federal support is bilingual children. Physically handicapped and mentally retarded children are the only other groups receiving at least 5 percent of the total.

Demographic Characteristics.--Demographic characteristics of the target population are defined on the basis of ethnicity, economic status, and residential location. Shown in table 11 is the funding for target population in terms of demographic characteristics. Here again is a variable on which multiple coding is allowed. Moreover, the categories overlap to a greater extent than with other multiply coded variables. Again, caution must be used in interpreting differences between the various populations. Federal funding patterns emphasize projects which deal with children from special demographic populations. Given the above-mentioned caution, it still appears that Spanish-surnamed students receive more support than black or American Indian students. In addition, more support went for urban students than for rural or suburban students.

Curriculum Projects.--Using curriculum projects only, we can examine the question of the types of KPU activities the Federal Government sponsors for these various groups. Shown in table 12 is the funding of curriculum projects for children with special characteristics by KPU activity. For projects targeted on children with special characteristics, a higher percentage of funds is spent on pilot or demonstration projects and a lower percentage on development and the evaluation of programs.

For the special populations to which Federal funds are most directed (bilingual and physically handicapped) more than 90 percent of the funds is spent on pilot and demonstration projects. For the mentally retarded and gifted students, over one-fourth of the funds is for

Table 10. Federal obligations for early childhood and adolescent education KPU, by special characteristics of population studied, fiscal year 1975.

Population Studied (Special Characteristics)	Dollars (thousands)	Percent
Total	295,041	100
Children without Special Characteristics	116,780	40
Population Not Specified	18,654	6
Children With and Without Special Characteristics	21,571	7
Children with Special Characteristics	138,036	47
Bilingual	76,480	26
Physically Handicapped	29,045	10
Mentally Retarded	16,025	5
Learning Disabled	12,616	4
Emotionally Ill	11,794	4
Academically Slow	7,472	3
School Dropout	6,748	2
Abused/Neglected	4,931	2
Drug User	4,161	1
Gifted	1,998	1
Delinquent	1,841	1
Adolescent Parent	728	*
Runaway	108	*

Note: Sum of the special characteristics of the population studied adds to more than children with special characteristics because a project could be classified as dealing with more than one special population.

* Less than 0.5 percent.

Table 11. Federal obligations for early childhood and adolescent education KPU, by demographic characteristics of population studied, fiscal year 1975.

Population Studied (Demographic characteristics)	Dollars (thousands)	Percent
Total	295,041	100
Population not Specified	118,928	40
Population Specified	176,113	60
Primarily Poor	87,113	30
Spanish-surnamed	78,195	26
Urban	58,500	20
Black	29,574	10
American Indian	25,470	9
Rural	21,963	7
White	18,236	6
Indian Reservation	8,332	3
Migrant	6,490	2
Suburban	4,917	2

Note: Sum of demographic characteristics of the population studied adds to more than population specified because a project could be classified as dealing with more than one population.

Table 12. Federal obligations for early childhood and adolescent education curriculum projects: Special characteristics of population studied by KPU activity, fiscal year 1975.

Population Studied (Special characteristics)	KPU function (Dollars in thousands)								KPU function (Percent)							
	Total	Basic Res.	Applied Res.	Pilot,Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Sup. & Util.	Total	Basic Res.	App. Res.	Pil.,Dem. & Repli.	Devel.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Total	229,265	2,305	9,347	165,869	35,382	792	11,268	4,303	100	1	4	72	15	*	5	2
Children without special Charact.	118,184	1,787	4,481	69,840	27,915	576	10,087	3,499	100	2	4	59	24	*	8	3
Children with special Charact.	130,350	1,076	5,867	105,353	15,440	280	1,528	805	100	1	4	81	12	*	1	1
Physically Handi.	19,918	0	351	18,629	625	0	22	291	100	0	2	94	3	0	*	1
Mentally Retarded	11,467	515	174	7,533	3,245	0	0	0	100	4	2	66	28	0	0	0
Learning Disabled	6,766	0	193	5,559	921	0	33	59	100	0	3	82	14	0	*	1
Emotionally Ill	6,547	0	244	5,014	948	0	292	51	100	0	4	76	14	0	4	1
Drug Users	3,834	185	1,865	1,312	471	0	0	0	100	5	49	34	12	0	0	0
Delinquent	1,103	185	173	690	0	0	56	0	100	17	16	62	0	0	5	0
Runaway	108	0	0	108	0	0	0	0	100	0	0	100	0	0	0	0
School Dropouts	5,769	0	1,372	3,563	546	55	233	0	100	0	24	62	9	1	4	0
Abused/Neglected	3,246	0	702	1,876	451	216	0	0	100	0	22	58	14	7	0	0
Academ. Slow	7,049	0	244	5,609	853	0	344	0	100	0	3	80	12	0	5	0
Bilingual	75,384	35	535	72,071	2,323	45	376	0	100	*	1	96	3	*	*	0
Gifted	1,848	0	0	925	549	0	0	374	100	0	0	50	30	0	0	9
Adoles. Parents	532	58	0	474	0	0	0	0	100	1	0	89	0	0	0	0

Notes: The total of $229.3 million is less than the total of $295.0 million because only projects using curriculum are included. Because projects could be classified as dealing with children both with and without special characteristics and with more than one special characteristic, the column entries do not add to the total.

* Less than 0.5 percent.

development projects. Applied research is emphasized in projects dealing with drug users, school dropouts, and the abused and neglected.

Turning to Federal support for target populations based on demographic characteristics, we find that pilot and demonstration projects account for almost all activity for specific demographic populations. (See table 13.) Although pilot and demonstration projects are the largest group for nonspecified students, they account for less than one-half of these funds. More emphasis is placed on development and evaluation for nonspecified students. Within the various demographic categories, we find a wide variation in the types of activities that are supported. For all groups except suburban, rural, and migrants, over 80 percent of the funds is for pilot and demonstration projects. For these three groups, development accounts for relatively more funds than the other groups.

PERFORMING ORGANIZATION

The types of organizations which perform education KPU activities include academic institutions, profit and nonprofit organizations, and State and local education agencies (SEA's and LEA's, respectively). The key questions to answer regarding Federal education KPU funding are: How much do each of these types of organizations receive and what types of KPU functions are supported?

All Projects

Shown in table 14 is the distribution of funds by performing organization. Local education agencies receive, in terms of dollars, over two-fifths of the total. Academic institutions and nonprofit organizations each account for about one-fifth of the total.

An issue in the study of KPU systems is the degree to which a division of labor among kinds of organizations develops (Radnor et al., 1977). As shown in table 15, academic institutions are the prime performers of both basic and applied research. Nonprofit organizations are the prime performers of policy research, development, and research support and utilization activities. They also carry out a substantial proportion of evaluation activities and applied research. Organizations for profit are the prime performers of evaluation studies and, to a lesser extent, are involved in policy research. Local education agencies are the prime performers of demonstration projects.

It is also possible to examine questions regarding the distribution of funds for each KPU function to types of performing organizations. As can be seen in table 16, academic institutions receive a high

Table 13. Federal obligations for early childhood and adolescent education curriculum projects: Demographic characteristics of population studied by KPU function, fiscal year 1975.

Population Studied (demographic characteristics)	KPU function (Dollars in thousands)								KPU function (Percent)							
	Total	Basic Res.	Applied Res.	Pilot,Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Sup. & Util.	Total	Basic Res.	App. Res.	Pil.,Dem. & Repli.	Devel.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Total	229,265	2,305	9,347	165,869	35,382	792	11,268	4,303	100	1	4	72	15	*	5	2
Population not Specified	69,660	1,083	4,982	30,424	19,694	704	8,663	4,110	100	1	7	44	28	1	12	6
Population Specified	159,605	1,222	4,364	135,445	15,689	88	2,604	193	100	1	3	85	10	*	2	*
White	15,461	630	402	12,693	818	9	910	0	100	4	3	82	5	*	6	0
Spanish-surnamed	75,625	452	939	72,688	665	0	881	0	100	1	1	96	1	0	1	0
Black	26,150	780	1,117	21,946	1,396	0	910	0	100	3	4	84	5	0	3	0
American Indian	24,509	70	2,070	19,958	2,035	79	111	185	100	3	8	81	8	*	*	1
Primarily poor	83,608	649	934	71,860	8,593	34	1,530	8	100	1	1	86	10	*	2	*
Urban	48,288	577	589	40,562	4,249	9	2,202	100	100	1	1	84	9	*	4	*
Suburban	4,511	239	0	1,606	2,302	0	364	0	100	5	0	36	51	0	8	0
Rural	17,577	139	980	11,783	4,268	9	397	0	100	1	6	67	24	*	2	0
Migrant	6,440	0	16	924	5,500	0	0	0	100	0	*	14	85	0	0	0
Indian Reserv.	8,151	0	333	6,774	865	79	0	100	100	0	4	83	11	1	0	1

Note: Sum of demographic characteristics of population studied adds to more than population specified because a project could be classified as dealing with more than one population.

* Less than 0.5 percent.

Table 14. Federal obligations for early childhood and adolescent education KPU, by performing organization, fiscal year 1975.

Performing Organization	Dollars (thousands)	Percent
Total	295,041	100
Academic	54,912	19
Nonprofit	51,254	17
Profit	14,607	5
State Education Agency	20,776	7
Local Education Agency	123,628	42
Other State and Local Agency	11,097	4
Other	18,768	6

Table 15. Federal obligations for early childhood and adolescent education: KPU function by performing organization, fiscal year 1975.

Performing Organization	KPU Function							
	Total	Basic Res.	Appl. Res.	Pilot, Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Supp. & Utiliz.
Dollars (thousands)	295,041	17,216	12,657	182,297	50,655	1,971	22,996	7,248
Percent								
Total	100	100	100	100	100	100	100	100
Academic	19	71	34	8	33	11	21	24
Nonprofit	17	14	29	8	38	34	27	52
Profit	5	4	*	*	2	20	49	8
SEA	7	*	4	8	11	2	*	10
LEA	42	0	10	66	4	17	0	*
Other State & Local	4	5	14	3	4	12	1	1
Other	6	5	8	7	8	5	2	5

Percentages based on data appearing in appendix 2.
* Less than 0.5 percent.

Table 16. Federal obligations for early childhood and adolescent education: Performing organization by KPU function, fiscal year 1975.

Performing Organization	Dollars (thousands)	KPU Function (percent)							
		Total	Basic Res.	Appl. Res.	Pilot, Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Supp. & Utiliz.
Total	295,041	100	6	4	62	17	1	8	2
Academic	54,912	100	22	8	27	30	*	9	3
Nonprofit	51,254	100	5	7	28	38	1	12	7
Profit	14,607	100	5	*	4	7	2	77	4
SEA	20,776	100	*	2	67	27	*	*	3
LEA	123,628	100	0	1	97	2	*	0	*
Other State & Local	11,097	100	8	16	54	18	2	1	1
Other	18,768	100	4	6	65	21	*	2	2

Percentages based on data appearing in appendix 2.
* Less than 0.5 percent.

percentage of their funds for development, demonstrations, and basic research. Nonprofit organizations receive their funds primarily for development and demonstrations. The vast majority of funds to profit institutions are for evaluation studies. State departments of education receive their funds for demonstrations and, to a lesser extent, development projects. Local education agencies receive almost all their funds for demonstration projects.

In summary, although there is a fair amount of overlap, these distributions clearly are not random. Each KPU function tends to be supported largely in one or two kinds of organizations, and each type of organization tends to receive a majority of its funds for only one or two functions. This finding contradicts the contention of Guba and Clark (1975) that there is little or no division of labor among different kinds of KPU organizations.

Curriculum Projects

Turning to the performers of projects which contain a curriculum component, we find that LEA's receive one-half of these funds. (See table 17.) Nonprofit, academic, and other performing organizations each receive between 10 and 15 percent of the funds.

The specialization of performing organizations found in the previous section is also evident when just the curriculum projects are examined.[11/] Basic research on curriculum is primarily conducted by academic institutions, pilot and demonstration projects by LEA's, development by nonprofit organizations, evaluation research by profit organizations, and research support and utilization activities by nonprofit organizations. (See table 18.) Academic, nonprofit, and other performing organizations are the major performers of applied and policy research.

As can be seen in table 19, academic institutions receive two-fifths of their curriculum-related funds for pilot or demonstration projects and three-tenths for development. Nonprofit organizations receive one-half of their funds for development and one-third for pilot and demonstration projects. Profit organizations receive the vast majority of their funds for evaluation research. Finally, LEA's, SEA's, and other performing organizations receive the bulk of their funds for pilot and demonstration projects.

INTERAGENCY DIFFERENCES

According to Nelson, Sowers, and Mason (1977), Federal education KPU activity is spread over 6 departments, 7 independent agencies, and

Table 17. Federal obligations for early childhood and adolescent education curriculum projects, by performing organization, fiscal year 1975.

Performing Organization	Dollars (thousands)	Percent
Total	229,265	100
Academic	28,925	13
Nonprofit	35,038	15
Profit	8,732	4
State Education Agency	14,236	6
Local Education Agency	117,955	51
Other	24,379	11

Table 18. Federal obligations for early childhood and adolescent education curriculum projects: KPU function by performing organization, fiscal year 1975.

Performing Organization	KPU Function							
	Total	Basic Res.	Appl. Res.	Pilot, Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Supp. & Utiliz.
Dollars (thousands)	229,265	2,305	9,347	165,869	35,382	792	11,268	4,303
Percent								
Total	100	100	100	100	100	100	100	100
Academic	13	61	33	7	25	20	25	17
Nonprofit	15	7	28	7	49	39	4	64
Profit	4	18	0	*	*	0	67	6
SEA	6	0	1	7	7	0	*	6
LEA	51	0	10	70	4	0	0	0
Other	11	13	27	9	14	41	3	6

Percentages based on data appearing in appendix 3.
* Less than 0.5 percent.

Table 19. Federal obligations for early childhood and adolescent education curriculum projects: Performing organization by KPU function, fiscal year 1975.

Performing Organization	Dollars (thousands)	KPU Function (Percent)							
		Total	Basic Res.	Appl. Res.	Pilot, Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Supp. & Utiliz.
Total	229,265	100	1	4	72	15	*	5	2
Academic	28,925	100	5	11	41	30	*	10	2
Nonprofit	35,038	100	*	8	32	50	1	1	8
Profit	8,732	100	5	0	3	2	0	87	3
SEA	14,236	100	0	1	79	18	0	*	2
LEA	117,955	100	0	1	98	1	0	0	0
Other	24,379	100	1	10	64	20	1	2	1

Percentages based on data appearing in appendix 3.
* Less than 0.5 percent.

56 programs. Given this dispersion of education KPU activity, it is natural to question the extent to which these various departments and agencies are supporting the same kinds of activities.

Using the data base developed by the National Academy of Sciences for the National Science Foundation, Mason, Nelson, and Sowers (1977) found that the various Federal agencies support different kinds of KPU functions. However, the NAS data base does not contain information on the primary focus and the content of the projects or the organizations performing the work. The IRIS data base, therefore, is used to further explicate interagency differences in education KPU sponsorship.

Before presenting these comparisons, it must be emphasized that the IRIS data base covers only 58 percent of all education KPU funding. As was mentioned previously, this data base is incomplete with regard to agencies, age groups, topical areas, and functions.

It should also be noted that in our analysis of interagency differences we have clustered the agencies into five categories:

- o National Institute of Education
- o Office of Education
- o Public Health Service
- o Other HEW agencies
- o Other Federal agencies

KPU Function

Although we have already examined interagency differences in terms of KPU functions using the NAS data base (Mason, Nelson, and Sowers, 1977), it is still useful to examine this question using the IRIS data base. This is the case because the IRIS data base separates basic from applied research, whereas the NAS data base combines these activities into a single category of research.

In comparing the education KPU functions sponsored by various agencies, two questions should be addressed. First, which of the KPU functions does each agency emphasize? Second, of the total funds obligated for each type of function, which agencies account for which percentage of the total? Based on detailed data presented in appendix 3, the first question examines the distribution by rows, while the second examines the distribution by columns. Table 20 presents the data using a less detailed classification of agencies.

Table 20. Federal obligations for early childhood and adolescent education, KPU: Funding agency and type of KPU function, fiscal year 1975.

Function	All agencies	NIE	OE	PHS	Other HEW	Other Federal
Obligations ($000's)						
Total	295,041	45,457	207,889	25,328	14,828	1,541
Basic Research	17,216	854	1,167	13,295	1,497	404
Applied Research	12,657	5,662	2,086	3,756	1,128	25
Pilot, Demonstration, or Replic.	182,297	7,649	162,866	4,874	6,502	405
Development	50,656	18,205	28,287	2,140	2,001	22
Policy Research	1,972	534	1,151	0	216	70
Evaluation Research	22,995	8,110	9,660	1,220	3,448	558
Research Support and Utilization	7,248	4,443	2,671	43	34	57
Percent Across						
Total	100	15	71	9	5	1
Basic Research	100	5	7	78	9	2
Applied Research	100	45	16	30	9	*
Pilot, Demonstration, or Replic.	100	4	89	3	4	*
Development	100	35	57	4	4	*
Policy Research	100	27	58	0	11	4
Evaluation Research	100	35	42	5	15	2
Research Support and Utilization	100	61	37	1	*	1
Percent Down						
Total	100	100	100	100	100	100
Basic Research	6	2	1	53	10	26
Applied Research	4	13	1	15	8	2
Pilot, Demonstration, or Replic.	62	17	78	19	44	26
Development	17	39	14	8	14	1
Policy Research	1	1	1	0	1	5
Evaluation Research	8	18	5	5	23	36
Research Support and Utilization	2	10	2	*	*	4

* Less than 0.5 percent.

In examining the sources of funds obligated for each function, we find that the Public Health Service (PHS) supports more than three-fourths of the basic research activity. For applied research, on the other hand, NIE supports almost one-half the work while PHS supports almost one-third of the work. The vast majority of pilot and demonstration projects are supported by the Office of Education (OE). OE is the primary sponsor of policy research, evaluation, and development. For each of the latter functions, NIE contributes a substantial amount of support. NIE is the major sponsor of research support and utilization activities (i.e., projects that do not gather or analyze data, but support the planning, implementation, or dissemination of research such as conferences, publications, or installation of proven models).

Turning to the percentage of funds obligated by each agency for each function, we find that almost two-fifths of NIE's funds is obligated for development. In addition, at least one-tenth of NIE's funds is obligated for evaluation, applied research, pilot and demonstration projects, and research support and dissemination activities. Almost all OE funds are for pilot or demonstration projects. In addition, over one-tenth of OE's funds is for development. Over one-half of the funds obligated by PHS is for basic research. Other functions for which PHS provides a significant amount of support are pilot and demonstration projects and applied research. Other HEW agencies are primarily involved in pilot and demonstration projects and, to a lesser extent, in evaluation, development, and basic research. Other Federal agencies are primarily involved in evaluation, basic research, and pilot and demonstration projects.

Although the Office of Education obligates more than three-fourths of its funds for pilot and demonstration projects, a number of programs within OE have markedly different patterns of funding. The Division of Environmental Education and the Bureau of Occupational and Adult Education obligated the majority of their funds for development projects while the Office of Planning, Budget, and Evaluation supported primarily evaluation projects. (See appendix 3.)

Primary Focus

A key variable in describing the content of a project is its primary focus. Shown in table 21 are the obligations by primary focus for each agency cluster. These data can be examined in two ways. First, in each of the primary focus areas, what percentage of the support is provided by each agency (percent across)? Second, for each agency what percentage of its funds is used in each of the primary focus areas (percent down)?

Table 21. Federal obligations for early childhood and adolescent education, KPU: Funding agency and primary focus, fiscal year 1975.

Primary Focus	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Obligations ($000's)						
Total	295,038	45,457	207,887	25,328	14,826	1,541
Child or Adolescent Development	14,185	387	913	11,924	757	204
Physical Development	1,949	233	0	1,560	0	156
Cognitive Development	6,480	95	701	5,479	205	0
Socioemotional Development	4,639	0	137	4,147	307	48
Other Development	1,117	59	75	738	295	0
Family	1,587	0	236	859	389	103
Neighborhood or Community Environment	33	0	0	33	0	0
Broad Social Environment	546	0	0	528	0	18
Study of Research Methods	2,284	596	1,399	56	231	2
Health or Welfare Service	19,664	0	2,377	6,533	9,981	773
Day Care	3,606	0	372	320	2,744	170
Health Care	5,543	0	884	4,324	290	45
Protective/Advocacy Service	6,719	0	349	1,491	4,879	0
Other Services	3,796	0	772	398	2,068	558
Educational Services	256,106	44,474	202,940	4,783	3,468	441
Special Education	43,743	205	42,620	918	0	0
Early Childhood Education	5,341	246	2,830	1,036	1,211	18
Elementary Education	80,852	2,747	77,245	757	95	8
Secondary Education	18,671	7,054	11,417	155	17	28
Postsecondary Education	5,548	1,510	2,874	828	108	228
Alternative Education	1,500	0	1,078	321	89	12
Other Educational Services	100,451	32,712	64,876	768	1,948	147
Juvenile Justice	633	0	21	612	0	0

(Continued)

Table 21. Federal obligations for early childhood and adolescent education, KPU: Funding agency and primary focus, fiscal year 1975. (cont'd)

Primary Focus	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Percent Across						
Total	100	15	70	9	5	1
Child or Adolescent Development	100	3	6	84	5	1
Physical Development	100	12	0	80	0	8
Cognitive Development	100	1	11	84	3	0
Socioemotional Development	100	0	3	89	7	1
Other Development	100	5	7	66	22	0
Family	100	0	15	54	24	7
Neighborhood or Community Environment	100	0	0	100	0	0
Broad Social Environment	100	0	0	97	0	3
Study of Research Methods	100	26	61	2	10	*
Health or Welfare Service	100	0	12	33	51	4
*Day Care	100	0	10	9	76	5
Health Care	100	0	16	78	5	1
Protective/Advocacy Service	100	0	5	22	73	0
Other Services	100	0	20	10	54	15
Educational Services	100	17	79	2	1	*
Special Education	100	*	97	2	0	0
Early Childhood Education	100	*	5	53	19	23
Elementary Education	100	3	96	1	*	*
Secondary Education	100	38	61	1	*	*
Postsecondary Education	100	27	52	15	2	4
Alternative Education	100	0	72	21	6	1
Other Educational Services	100	33	65	1	2	*
Juvenile Justice	100	0	3	97	0	0

(Continued)

Table 21. Federal obligations for early childhood and adolescent education, KPU: Funding agency and primary focus, fiscal year 1975. (cont'd)

Primary Focus	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
	Percent Down					
Total	100	100	100	100	100	100
Child or Adolescent Development	5	1	*	47	5	13
Physical Development	1	1	0	6	0	10
Cognitive Development	2	*	*	22	1	0
Socioemotional Development	2	0	*	16	2	3
Other Development	*	*	*	3	2	0
Family	1	0	*	3	3	7
Neighborhood or Community Environment	*	0	0	*	0	0
Broad Social Environment	*	0	0	2	0	1
Study of Research Methods	1	1	1	*	2	*
Health or Welfare Service	7	0	1	26	67	50
Day Care	1	0	*	1	18	11
Health Care	2	0	*	17	2	3
Protective/Advocacy Service	2	0	*	6	33	0
Other Services	1	0	*	2	14	36
Educational Services	87	98	98	19	23	29
Special Education	15	1	20	4	0	0
Early Childhood Education	2	1	1	4	8	1
Elementary Education	27	6	37	3	1	1
Secondary Education	6	15	5	1	*	2
Postsecondary Education	2	3	1	3	1	15
Alternative Education	*	0	1	1	1	1
Other Educational Services	34	72	31	3	13	9
Juvenile Justice	1	0	*	2	0	0

* Less than 0.5 percent.

The Public Health Service is the primary supporter of work on all types of cognitive and socioemotional development and studies of the family and the impact of the broad social environment on children and adolescents. This finding is not surprising in that, as has been shown previously, the work in these areas is primarily basic research and the PHS is the prime supporter of basic research. Although both the PHS and other HEW agencies are involved significantly in health and welfare services, they are supporting different types of activities. PHS is the primary supporter of health care projects, while other HEW agencies are involved in day care and protective service and advocacy programs.

The Office of Education is the primary supporter of all types of educational service projects with the exception of early childhood education, which is primarily supported by the PHS and, to a lesser extent, by other Federal and other HEW agencies. NIE contributes a significant proportion of the resources for secondary, postsecondary, and other educational service projects.

Turning to the emphasis of each agency (percent down), we find that almost all NIE and OE funds are for educational services. Most of NIE funds are for projects dealing with education in general, while OE is involved in elementary and special education projects in addition to general education activities. The PHS is involved primarily in studies of child or adolescent development and, to a lesser extent, in health or welfare and educational services. Other HEW agencies are primarily involved in health or welfare services and, to a lesser extent, in educational services. Other Federal agencies are primarily involved in health or welfare services and educational services.

Content of Curriculum Projects

As was discussed previously, SRG codes each project on a wide variety of content areas. One of these content areas is the project's use of educational curriculum. Almost all (87 percent) of OE's funds supports projects which involve curriculum. This figure for NIE is 63 percent; for PHS, 44 percent; for other HEW agencies, 54 percent; and other Federal agencies, 42 percent.

Target Populations

An important consideration when examining interagency differences in funding is the target population of the projects. Two projects could, for example, be concerned with developing reading materials, but one may be directed at children in general, while the other may be for bilingual students. Thus, the projects may appear, at first glance, to be concerned with the same topic but actually be quite different.

The IRIS data base classifies target populations in two ways: by special characteristics and demographic characteristics.

Shown in table 22 are the obligations for special characteristics by funding agency. The data in this table can be examined in two ways. First, for each type of special population, we can examine the relative contribution of each agency to the total amount of funds directed toward the group. Second, we can examine for each agency the distribution of its funds to the various types of special populations.

The Office of Education is the prime sponsor for most special populations. The only exceptions are abused and neglected children (other HEW agencies being the prime sponsors) and delinquent children and runaways (PHS being the prime sponsor). In fact, almost all support for children with special characteristics comes from OE.

Turning to the pattern of each agency's support, interesting differences emerge. Over three-fourths of NIE's funds goes to children without any special characteristics, while this is the case for only one-third of OE's funds. Over one-third of all OE funds for education KPU is for programs for bilingual students. Programs for the physically handicapped account for more than one-tenth of OE's funds. In projects accounting for over two-fifths of the funds obligated by PHS, the population is not specified. This is not surprising, because these projects typically involve basic research on cognitive or socioemotional development and probably are not concerned with special populations. Hence it can be assumed that these projects are concerned with children in general. The emphasis of other HEW agencies is on abused or neglected children.

In examining the demographic characteristics of the populations studied, we find that OE provides over one-half of the funds for each demographic group. (See table 23.) NIE is the only other agency which provides at least one-fourth of the funds to any one group (rural students).

In examining each agency's distribution, we see that only one-third of NIE's funds is for specific demographic populations, while this figure for OE is 70 percent. The populations NIE emphasizes are urban and rural students. OE's emphasis is primarily on the poor, Spanish-surnamed, and, to a lesser extent, urban students.

Performing Organization

Given that the various Federal agencies support different types of KPU activities in terms of KPU function and that different types of performing organizations are more involved in certain types of KPU

Table 22. Federal obligations for early childhood and adolescent education, KPU: Funding agency and special characteristics of population studied, fiscal year 1975.

Population Studied (special characteristics)	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Obligations ($000's)						
Total	295,041	45,457	207,889	25,328	14,826	1,541
Population not Specified	18,654	1,789	4,827	10,722	1,102	214
Children Without Special Characteristics	116,780	35,712	67,634	4,297	8,121	1,015
Both Children With and Without Special Characteristics	21,571	1,990	15,683	3,655	223	19
Children with Special Characteristics	138,036	5,966	119,744	6,654	5,380	292
Bilingual	76,840	2,449	73,454	296	640	0
Physically Handicapped	29,045	233	27,527	1,285	0	0
Mentally Retarded	16,025	233	13,424	2,367	1	0
Learning Disabled	12,616	0	11,291	1,325	0	0
Emotionally Ill	11,795	0	9,778	1,751	265	0
Academically Slow	7,473	1,343	5,220	619	56	234
School Dropout	6,748	2,024	4,068	412	0	244
Abused/Neglected	4,931	0	662	0	4,270	0
Drug User	4,161	0	324	3,837	0	0
Gifted	1,998	754	1,244	0	0	0
Delinquent	1,841	0	194	1,430	217	0
Adolescent Parent	728	0	336	151	183	58
Runaway	108	0	108	0	0	0
Percent Across						
Total	100	15	70	9	5	*
Population not Specified	100	9	26	57	6	1
Children Without Special Characteristics	100	31	58	4	7	1
Both Children With and Without Special Characteristics	100	9	73	17	1	*

(Continued)

Table 22. Federal obligations for early childhood and adolescent education, KPU: Funding agency and special characteristics of population studied, fiscal year 1975. (cont'd)

Population Studied (special characteristics)	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Children With Special Characteristics	100	4	87	5	4	*
Bilingual	100	3	96	*	1	0
Physically Handicapped	100	*	95	4	0	0
Mentally Retarded	100	1	84	15	*	0
Learning Disabled	100	0	89	10	0	0
Emotionally Ill	100	0	83	15	2	0
Academically Slow	100	18	70	8	1	3
School Dropout	100	30	60	6	0	4
Abused/Neglected	100	0	13	0	87	0
Drug User	100	0	8	92	0	0
Gifted	100	38	62	0	0	0
Delinquent	100	0	10	78	11	0
Adolescent Parent	100	0	46	21	25	8
Runaway	100	0	0	100	0	0
Percent Down						
Total	100	100	100	100	100	100
Population not Specified	6	4	2	42	7	14
Children Without Special Characteristics	40	78	32	17	55	66
Both Children With and Without Special Characteristics	7	4	8	14	2	1
Children With Special Characteristics	47	13	58	26	36	19
Bilingual	26	5	35	1	4	0
Physically Handicapped	10	1	13	5	0	0
Mentally Retarded	5	1	6	9	*	0
Learning Disabled	4	0	5	5	0	0

(Continued)

Table 22. Federal obligations for early childhood and adolescent education, KPU: Funding agency and special characteristics of population studied, fiscal year 1975. (cont'd)

Population Studied (special characteristics)	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Emotionally Ill	4	0	5	7	2	0
Academically Slow	2	3	2	2	*	15
School Dropout	2	4	2	2	0	16
Abused/Neglected	2	0	*	0	29	0
Drug User	1	0	*	15	0	0
Gifted	1	2	1	0	0	0
Delinquent	1	0	*	6	1	0
Adolescent Parent	*	0	*	1	1	4
Runaway	*	0	*	0	0	0

Note: Because projects could be classified as dealing with more than one special characteristic, the column entries do not add to the total.

* Less than 0.5 percent.

Table 23. Federal obligations for early childhood and adolescent education, KPU: Funding agency and demographic characteristics of population studied, fiscal year 1975.

Population Studied (demographic characteristics)	All agencies	NIE	OE	PHS/ NIH	Other HEW	Other Federal
Obligations ($000's)						
Total	295,041	45,457	207,889	25,328	14,826	1,541
Population not Specified	118,928	30,257	62,972	16,781	8,420	497
Population Specified	176,113	15,200	144,915	8,547	6,406	1,044
Primarily Poor	87,113	3,298	77,536	2,760	2,838	680
Spanish-surnamed	78,195	1,567	72,601	2,126	1,878	23
Urban	58,500	6,841	43,353	4,314	3,724	267
Black	29,574	1,041	21,030	3,918	2,997	588
American Indian	25,470	1,085	20,496	2,913	975	0
Rural	21,963	6,477	13,242	956	1,153	135
White	18,236	824	12,239	2,824	1,987	362
Indian Reservation	8,332	0	7,613	314	404	0
Migrant	6,490	0	6,370	0	120	0
Suburban	4,917	514	2,908	713	782	0
Percent Across						
Total	100	15	70	9	5	*
Population not Specified	100	25	53	14	7	*
Population Specified	100	9	82	5	4	*
Primarily Poor	100	4	89	3	3	1
Spanish-surnamed	100	2	93	3	2	*
Urban	100	12	74	7	6	*
Black	100	4	71	13	10	2
American Indian	100	4	80	11	4	0

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(Continued)

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Table 23. Federal obligations for early childhood and adolescent education, KPU: Funding agency and demographic characteristics of population studied, fiscal year 1975. (cont'd)

Population Studied (demographic characteristics)	All agencies	NIE	OE	PSH/ NIH	Other HEW	Other Federal
Rural	100	29	60	4	5	1
White	100	4	67	15	11	2
Indian Reservation	100	0	91	4	5	0
Migrant	100	0	98	0	2	0
Suburban	100	10	59	14	16	0
Percent Down						
Total	100	100	100	100	100	100
Population not Specified	40	67	30	66	57	32
Population Specified	60	33	70	34	43	68
Primarily Poor	30	7	37	11	19	44
Spanish-surnamed	26	3	35	8	13	1
Urban	20	15	21	17	25	17
Black	10	2	10	15	13	38
American Indian	9	2	10	12	6	0
Rural	7	14	6	4	8	9
White	6	2	6	11	13	23
Indian Reservation	3	0	4	1	3	0
Migrant	2	0	3	0	1	0
Suburban	2	1	1	3	5	0

Note: Sum of demographic characteristics of population studied adds to more than population specified because a project could be classified as dealing with more than one population.

* Less than 0.5 percent.

functions than others, it is reasonable to hypothesize that the various Federal agencies support different types of performing organizations. Shown in table 24 are funds obligated by each agency to the various types of performing organizations. Because it accounts for 70 percent of the total funds, OE tends to be a large source of funds for all types of performers. However, there are still substantial differences between performers in terms of which agencies support their work. Local education agencies receive almost all of their Federal education KPU funds from OE. Academic institutions receive almost one-half of their education KPU funds from OE and approximately one-fourth from both NIE and PHS. Included in the NIE figures for academic institutions are funds for the R&D centers.

Nonprofit institutions receive over two-fifths of their funds for education KPU from NIE and over one-third from OE. The NIE figure includes funds to support the Regional Education Laboratories. As was the case with LEA's, State education agencies receive the vast majority of their education KPU funds from OE. Although profit institutions receive over one-half of their funds for education KPU from OE, both other HEW agencies and NIE provide at least one-tenth of their support.

As can be seen in table 24 (percent down), the various Federal agencies support different types of performers. About one-half of NIE's funds goes to nonprofit institutions and one-fourth to academic institutions. Almost three-fifths of OE's funds goes to LEA's. The PHS obligates most of its funds to academic institutions. This is to be expected since PHS supports primarily basic research, and academic institutions are the primary performers of this type of work. Other HEW agencies support a wide variety of performers, with nonprofit and academic institutions being the primary performers.

These data on interagency differences in performing organizations raise the question as to why these differences exist. Obviously, there are a large number of causes, ranging from congressional mandate to the type of KPU function involved. Although KPU function is related to type of performing organization, there are still large differences between the agencies in types of performing organizations supported, even when type of KPU function is held constant. For example, 73 percent of NIE's funds for basic research go to nonprofit organizations. For the other agencies, no more than 14 percent goes to these types of organizations. In addition, 43 percent of NIE's funds for applied research goes to academic institutions, compared to only 18 percent for OE. On the other hand, one-fifth of OE's funds for applied research goes to both LEA's and SEA's. The distribution of funds for development projects shows a similar difference between NIE and OE, with NIE providing more support to nonprofit institutions, while OE supports LEA's and SEA's. The distribution of funds for evaluation

Table 24. Federal obligations for early childhood and adolescent education by funding agency and type of performing organization, fiscal year 1975.

Type of Performing Organization	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Obligations ($000's)						
Total	295,041	45,457	207,889	25,328	14,826	1,541
Local Educational Agency	123,628	2,105	120,204	1,307	12	0
Academic Institution	54,912	11,918	24,314	14,021	4,078	581
Nonprofit Institution	51,254	22,225	19,686	4,247	4,926	170
State Educational Agency	20,776	2,241	18,269	20	245	0
Profit Institution	14,607	2,160	8,635	466	2,623	722
Other State or Local Agency	11,097	4,507	3,434	1,738	1,417	0
Other	18,768	301	13,347	3,529	1,525	68
Percent Across						
Total	100	15	70	9	5	*
Local Educational Agency	100	2	97	1	*	0
Academic Institution	100	22	44	26	7	1
Nonprofit Institution	100	43	38	8	10	*
State Educational Agency	100	11	88	*	1	0
Profit Institution	100	15	59	3	18	5
Other State or Local Agency	100	41	31	16	13	0
Other	100	2	71	19	8	*

(Continued)

Table 24. Federal obligations for early childhood and adolescent education by funding agency and type of performing organization, fiscal year 1975. (cont'd)

Type of Performing Organization	All agencies	NIE	OE	PHS/NIH	Other HEW	Other Federal
Percent Down						
Total	100	100	100	100	100	100
Local Educational Agency	42	5	59	5	*	0
Academic Institution	19	26	12	56	28	38
Nonprofit Institution	17	49	9	17	33	11
State Educational Agency	7	5	9	*	2	0
Profit Institution	5	5	4	2	18	47
Other State or Local Agency	4	10	2	7	10	0
Other	6	1	6	14	10	4

* Less than 0.5 percent.

by performer also shows interagency differences. OE, other HEW agencies, and other Federal agencies allocate over two-thirds of their funds for evaluation to profit institutions, while NIE allocates a similar percentage to nonprofit institutions, and PHS divides its funds for evaluation between nonprofit and academic institutions. Finally, for demonstration projects OE obligates 72 percent of these funds to LEA's, while NIE distributes these funds to a variety of performers, no one of which receives more than one-fourth of the total.

Interrelationships Among Variables

The variables that we have used to differentiate the support of education KPU activities of the various Federal agencies are correlated. Therefore, it is helpful to use these variables in combination to differentiate agency education KPU activity.

SRG, under contract to NIE, has performed this type of analysis for NIE and OE data only, using number of projects instead of the amount of funding as the dependent variable (Harrell, Wirtz, and Hurt, 1977). Although the dependent variable was different, the results of their analysis exhibit the same pattern as do our analyses using funding level. Over one-half of NIE's projects, compared to 2 percent of OE's projects, can be described as basic research, applied research, evaluation, policy research, or research support and utilization projects performed by academic or nonprofit organizations for children in general. Further, an additional 15 percent of NIE's projects, compared to 2 percent of OE's projects, can be classified as development projects targeted on children in general excluding vocational education projects. On the other hand, 53 percent of OE's projects, compared to 2 percent of NIE's projects, can be classified as demonstration projects focused on early childhood, elementary, secondary, or special education services.

SUMMARY AND CONCLUSIONS

Analysis of Federal funding for education knowledge production and utilization using data from the IRIS data base indicates the following:

- Almost all funds (92 percent) are spent on problem-solving activities followed by knowledge production (6 percent) and utilization (2 percent).

- Demonstration projects account for most of the funds.

- The primary focus of the vast majority of the activity is on educational services. Within this category large amounts of funds are obligated for educational services with the grade not specified, elementary education, and special education.

- Curriculum projects emphasize the basic skill areas of mathematics and reading, and typically involve demonstration activities.

- More funds are spent on projects for children with special characteristics than children without special characteristics. More funds are expended on projects in which bilingual children are the target population than for any other special target population. Projects for the physically handicapped and mentally retarded also receive a significant amount of funds.

- Federal education KPU activities emphasize children from special demographic populations rather than children in general.

- Local education agencies receive 42 percent of Federal education KPU funds, while academic and nonprofit institutions receive 19 percent and 17 percent of the funds, respectively.

- The various performing organizations are involved in the various KPU functions to different degrees.

- Federal agencies support different kinds of KPU activities in terms of KPU function, primary focus of the project, and performing organization.

- NIE primarily supports development, evaluation, and applied research projects directed at children in general performed by nonprofit and academic institutions.

- OE primarily supports demonstration projects for children with special characteristics performed by local education agencies.

- PHS primarily supports basic research on cognitive and socio-emotional development performed by academic institutions.

- Other HEW agencies tend to support demonstration projects in health or welfare services for children with special characteristics.

- Other Federal agencies are involved in a wide variety of activities with no special focus.

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FOOTNOTES

1. The first report in this series (Nelson, Sowers, and Mason, 1977) developed a composite estimate of Federal funding for education KPU using three data bases in addition to the IRIS data base. The second report (Mason, Nelson, and Sowers, 1977) examined this support by KPU function and agency using data from the National Academy of Sciences Study Project on Social Research and Development.

2. See Nelson, Sowers, and Mason (1977) for a more detailed discussion of these data bases.

3. See Mason, Nelson, and Sowers (1977) for a more detailed discussion of the data base.

4. For a more complete discussion of the limitations of the IRIS data base see Nelson, Sowers, and Mason (1977).

5. A new panel covering this age group is being formed.

6. It should be mentioned that development and demonstrations are often considered major categories in their own rights (NAS, forthcoming).

7. The IRIS data base includes all projects which were active during a given fiscal year, whether or not these projects received funds during that fiscal year. In our analysis of funding, we refer only to those projects which received fiscal year 1975 funds and only to the amount of fiscal year 1975 funds received. However, when we refer to the number of projects as opposed to dollars spent, we are including all projects which were active in fiscal year 1975, whether or not they received fiscal year 1975 funds.

8. There are two important exceptions. According to the rationale, basic research is a form of knowledge production, while applied research is a form of problem solving. The SRG data make the distinction between basic and applied research and so fit the rationale. With the NAS data, applied research could not be identified separately and so had to be included in knowledge production. In addition, NAS makes distinctions between various types of demonstration projects, one of which, policy implementation, is included in utilization. The SRG data do not make this distinction and hence all demonstration projects are included in problem solving. Thus, the analyses of SRG and NAS data are not comparable on these points.

9. Of course, in the present classification system applied research is a residual category; policy research and evaluation research are also forms of applied research.

10. NSF obligated $39.9 million for science education in fiscal year 1975 (Nelson, Sowers, and Mason, 1977).

11. This is to be expected, as curriculum projects account for 78 percent of the total education KPU funds found in the IRIS data base.

APPENDIX A

KPU FUNCTIONS

Basic (Directed primarily toward increase of knowledge, improvement of understanding, providing background information, and discovery of basic relationships; not necessarily applicable to solutions of immediate problems, may include theory building.)

Applied (Results are intended to be more directly applicable to immediate problems than basic research; applied research may be derived from basic research or theory or may be empirical; aimed at showing how existing knowledge can be used in new and useful ways.)

> Pilot Study (small-scale initial trials to determine feasibility and to identify problems in preparation for larger efforts)
>
> Development (the construction of tests, systems, materials, methods, media, equipment, facilities, prototypes, models)
>
> Demonstration and/or replication (activities designed specifically to show the method of operation or applicability of a research or program model)

Evaluation Research (To determine overall effectiveness of a broad program, projects, models, strategies, materials, methods, and costs.)

Research Support and Utilization Activities (such as conferences and publications to disseminate information or installation funding for proven demonstration projects)

Policy Research (of needs, goals, priorities, guidelines, etc.)

APPENDIX B

PRIMARY FOCUS CATEGORIES

The development of the child or adolescent

- Physical development
- Cognitive development
- Social-emotional development

The family

The neighborhood or community environment

The broader social environment (include various kinds of social change, social crises, or cultural effects)

Study of research methods

Health or welfare services

- Day care
- Health care (include drug abuse prevention, mental health services, and others)
- Protective/advocacy services (emergency protective, adoptive foster care, and all services for abused children)

Educational services

- Special education
- Early childhood education (infant-preschool)
- Elementary school education (K-6 grade)
- Secondary school education (junior and senior high school)
- Post-secondary education (college, adult education)
- Alternative education (outside of school)

Juvenile justice institutions or services (include delinquency treatment or prevention)

Appendix 1. Federal obligations for early childhood and adolescent education KPU, by KPU function and primary focus, fiscal year 1975. (Dollars in thousands.)

Primary Focus	Total	Knowledge Production	Problem Solving						Utilization
		Basic Research	Total	Applied Research	Pilot, Dem. & Repli.	Develop.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Total	295,041	17,216	270,577	12,657	182,297	50,656	1,972	22,995	7,248
Child or Adolescent Development	14,187	11,638	2,465	315	1,974	176	0	0	84
Physical Development	1,949	1,222	728	0	728	0	0	0	0
Cognitive Development	6,481	5,813	609	51	507	51	0	0	59
Socioemotional Development	4,640	3,923	691	264	302	125	0	0	25
Other Development	1,117	680	437	0	437	0	0	0	0
Family	1,587	1,194	393	0	326	0	0	67	0
Neighborhood or Community Environment	33	33	0	0	0	0	0	0	0
Broad Social Environment	547	547	0	0	0	0	0	0	0
Study of Research Methods	2,285	56	1,702	0	231	837	2	632	526
Health or Welfare Services	18,237	992	17,076	2,919	8,024	2,170	216	3,747	170
Day Care	3,788	320	3,468	16	853	0	0	2,599	0
Health Care	5,544	514	5,029	1,809	1,678	947	0	595	0
Protective/Advocacy Services	5,293	100	5,194	812	3,182	984	216	0	0
Other Services	3,612	58	3,385	282	2,311	239	0	553	170
Educational Services	257,531	2,754	248,307	9,423	171,454	47,472	1,754	18,204	6,467
Special Education	43,743	445	41,509	825	28,270	11,384	213	817	1,788
Early Childhood Education	5,636	194	5,416	596	3,709	720	5	386	24
Elementary Education	80,555	240	80,128	598	74,362	2,665	0	2,503	187
Secondary Education	18,671	341	18,329	2,751	9,567	5,725	19	267	1
Postsecondary Education	5,548	182	5,260	368	2,744	1,510	237	401	106
Alternative Education	1,501	12	1,488	321	1,053	89	0	25	0
Other Educational Services	101,877	1,340	96,177	3,964	51,749	25,379	1,280	13,805	4,361
Juvenile Justice	633	0	633	0	289	0	0	344	0

Appendix 2. Federal obligations for early childhood and adolescent education KPU, by KPU function and performing organization, fiscal year 1975. (Dollars in thousands.)

Performing Organization	KPU Function							
	Total	Basic Res.	Appl. Res.	Pilot, Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Supp. & Utiliz.
Total	295,041	17,216	12,657	182,297	50,655	1,971	22,996	7,248
Academic	54,912	12,182	4,371	14,808	16,798	211	4,830	1,711
Nonprofit	51,254	2,526	3,646	15,061	19,282	679	6,273	3,788
Profit	14,607	735	10	538	1,035	384	11,309	594
SEA	20,776	20	538	13,881	5,552	42	39	703
LEA	123,628	0	1,300	119,903	2,088	330	0	3
Other State and Local	11,097	929	1,729	5,973	2,029	233	109	93
Other	18,768	821	1,062	12,131	3,871	91	436	356

Appendix 3. Federal obligations for early childhood and adolescent education KPU, by function and department, agency and program, fiscal year 1975. (Dollars in thousands.)

Department or Agency and program	Total	Knowledge Production		Problem Solving					Utilization
		Basic Research	Total	Applied Research	Pilot, Dem. & Repli.	Develop.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Total	295,041	17,214	270,577	12,659	182,294	50,655	1,970	22,995	7,248
1. Department of HEW	293,500	16,811	269,494	11,634	181,890	50,633	1,900	22,437	7,191
Education Division	253,346	2,020	244,208	7,749	170,515	46,492	1,684	17,769	7,114
Office of Education	207,889	1,166	204,048	2,087	162,866	28,287	1,150	9,659	2,671
Bureau of School Systems	56,131	0	56,131	81	48,391	7,660	0	0	0
Supplementary Centers	5,808	0	5,808	81	5,456	272	0	0	0
Equal Opportunity	640	0	640	0	25	615	0	0	0
Follow Through	42,910	0	42,910	0	42,910	0	0	0	0
Environmental Education	6,773	0	6,773	0	0	6,773	0	0	0
Bureau Occ./Adult Education	7,416	220	7,169	274	1,017	4,462	233	1,183	26
Bureau Ed. for Handicapped	44,750	446	42,445	1,322	28,193	11,808	213	909	1,857
Office of the Commissioner	79,034	309	78,405	104	76,217	1,852	232	0	319
Office of Bilingual Education	68,555	0	68,555	0	67,435	1,120	0	0	0
Right-to-Read	2,312	0	2,312	0	1,905	407	0	0	0
Office of Career Education	8,167	309	7,538	104	6,877	325	232	0	319
Office Plan/Budget/Evaluation	9,012	191	8,626	0	0	666	393	7,567	195
Office of Indian Education	11,546	0	11,272	306	9,048	1,839	79	0	274
National Institute of Education	45,457	854	40,160	5,662	7,649	18,205	534	8,110	4,443

(Continued)

Appendix 3. Federal obligations for early childhood and adolescent education KPU, by function and department, agency and program, fiscal year 1975. (Dollars in thousands.) (cont'd)

Department or Agency and program	Total	Knowledge Production	Problem Solving						Utilization
		Basic Research	Total	Applied Research	Pilot, Dem. & Repli.	Develop.	Policy Res.	Eval. Res.	Res. Sup. & Util.
Public Health Service	25,328	13,294	11,990	3,757	4,873	2,140	0	1,220	43
ADAMHA	16,807	7,258	9,506	3,285	3,922	1,079	0	1,220	43
NIMH (Mental Health)	10,864	6,086	4,735	1,108	2,060	458	0	1,109	43
NIAA-A (Alcoholism)	3,135	680	2,455	1,239	976	129	0	111	0
NIDA (Drug Abuse)	2,808	492	2,316	938	886	492	0	0	0
National Institutes of Health	7,870	5,622	2,248	472	817	959	0	0	0
NICHD (Child Health)	7,030	4,782	2,248	472	817	959	0	0	0
NINCDS (Neurological)	840	840	0	0	0	0	0	0	0
Health Services Administration	651	414	236	0	134	102	0	0	0
Bureau Community Health Service	651	414	236	0	134	102	0	0	0
Office of Human Development	14,644	1,497	13,113	1,128	6,320	2,001	216	3,448	34
Office of Child Development	14,167	1,477	12,656	1,128	6,077	1,804	216	3,431	34
Office of Youth Development	440	0	440	0	243	197	0	0	0
Rehabilitation Services Adm.	37	20	17	0	0	0	0	17	0
Social Rehabilitation Service	182	0	182	0	182	0	0	0	0
2. Department of Agriculture	578	391	184	25	0	22	58	79	1
Coop. State Research Service	578	391	184	25	0	22	58	79	1
3. Department of Labor	951	0	895	0	404	0	12	479	56
4. ACTION	12	12	0	0	0	0	0	0	0

Note: Detail does not necessarily add to total because of rounding.

Appendix 4. Federal obligations for early childhood and adolescent education curriculum projects, by KPU function and performing organization, fiscal year 1975. (Dollars in thousands.)

Performing Organization	KPU Function							
	Total	Basic Res.	Appl. Res.	Pilot, Dem. & Replic.	Devel.	Policy Res.	Eval. Res.	Res. Supp. & Utiliz.
Total	229,265	2,305	9,347	165,869	35,382	792	11,268	4,303
Academic	28,925	1,417	3,099	11,890	8,835	161	2,785	738
Nonprofit	35,038	155	2,654	11,202	17,462	308	487	2,768
Profit	8,732	424	0	304	158	0	7,564	282
SEA	14,236	0	96	11,252	2,596	0	39	254
LEA	117,955	0	977	115,532	1,466	0	0	0
Other	24,378	309	2,520	15,635	4,885	323	392	261

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